

Claims

[c1] What is claimed is:

1. A plasma cutting torch comprising:
a torch body;
an output electrode disposed in the torch body; and
a plasma cutter starting circuit disposed in the torch body and configured to generate a pilot arc at the output electrode.

[c2] 2. The plasma cutting torch of claim 1 further comprising a cutting trigger, wherein the plasma cutter starting circuit is configured to transfer a high-frequency, high-voltage power to the output electrode of the plasma cutting torch upon activation of the cutting trigger.

[c3] 3. The plasma cutting torch of claim 1 wherein output electrode of the plasma cutting torch is configured to receive high-frequency power to cause a pilot arc across an airgap to a workpiece.

[c4] 4. The plasma cutting torch of claim 1 wherein the torch body includes a handle and wherein the plasma cutter starting circuit is disposed within the handle.

- [c5] 5. The plasma cutting torch of claim 1 wherein the plasma cutter starting circuit is configured to supply a high-frequency, high-voltage power to the output electrode independent of a starting configuration of a plasma cutter power source to which the torch is connected.
- [c6] 6. The plasma cutting torch of claim 5 wherein a distance between the output electrode and the plasma cutter starter circuit is less than 12 inches.
- [c7] 7. The plasma cutting torch of claim 1 wherein the plasma cutter starting circuit is disposed within a manually controlled plasma cutting torch.
- [c8] 8. The plasma cutting torch of claim 1 wherein the starting circuit is further configured such that noise radiation from the plasma cutter starting circuit is negligible.
- [c9] 9. The plasma cutting torch of claim 1 wherein the plasma cutting torch is operable with a power source configured for a contact start plasma cutter.
- [c10] 10. The plasma cutting torch of claim 1 wherein the plasma cutter starting circuit is disposed within a robotic plasma cutting torch.
- [c11] 11. The plasma cutting torch of claim 1 wherein the

starting circuit is further configured to generate the pilot arc at the output electrode to ionize gas and initiate generation of a plasma.

- [c12] 12. A manufacturing kit comprising:
a plasma cutting torch configured to operatively engage a power source; and
a pilot arc starting circuit configured to supply the plasma cutting torch with a pilot arc independent of a starting configuration of the power source.
- [c13] 13. The manufacturing kit of claim 12 wherein the pilot arc starting circuit is disposed within the plasma cutting torch.
- [c14] 14. The manufacturing kit of claim 12 wherein the starting configuration of the power source is a contact start starting configuration.
- [c15] 15. The manufacturing kit of claim 12 further comprising an output electrode wherein the pilot arc starting circuit is configured to supply a high-frequency, high-voltage, low-current power to the output electrode to initiate plasma cutting.
- [c16] 16. A plasma cutting assembly comprising:
a power source;
a plasma cutting torch; and

a starter circuit disposed within the plasma cutting torch and configured to supply the plasma cutting torch with a pilot arc independent of a starting mechanism of the power source.

[c17] 17. The plasma cutting assembly of claim 16 wherein the power source is configured for a contact start plasma cutter.

[c18] 18. The plasma cutting assembly of claim 16 wherein the starter circuit is configured to supply a high-frequency, high-voltage, low-current power to generate the pilot arc.

[c19] 19. The plasma cutting assembly of claim 16 wherein the starter circuit is disposed within a handle of the plasma cutting torch.

[c20] 20. The plasma cutting assembly of claim 16 having an open circuit output voltage of greater than 230 Volts Direct Current.